Figure 5 is a schematic illustration of dimensions referenced in the pattern generation equations useful with the present invention; and

Figure 6 is a schematic illustration of dimensions referenced in the pattern generation equations useful with the present invention.

INS. 5 OF AMENDMENT

DETAILED DESCRIPTION OF THE INVENTION

Process and Apparatus:

Figure 1 illustrates in schematic form the process and apparatus 10 of the present invention. The apparatus is composed fundamentally of two mated embossing rolls 15 and 16, multiple glue metering/application rolls 11-14, a pressure roll 17, a strip-off roll 18, and a chilled S-wrap 19. The embossing rolls are steel, with a matched embossing pattern etched into them which interlocks to emboss a web of sheet material passed therebetween. The roll with pockets and raised lands is referred to as the female embossing roll 15, while the roll with raised nubs and recessed lands is referred to as the male embossing roll 16. The female embossing roll preferably has a release coating applied to its surface. The glue application/ metering rolls 11-14 typically alternate between being plain steel or rubber-coated steel. The glue application roll 14 (the last roll in the glue system) is always rubber coated steel. The pressure roll 17 and strip off roll 18 are also rubber coated steel. The chilled S-wrap is composed of hollow steel rolls 19 with a release coating on their outside surfaces and coolant flowing through the rolls. The direction of roll rotation is shown in Figure 1 with arrows.

More specifically, with reference to Figure 1, an adhesive (such as a hot melt pressure sensitive adhesive) 40 is extruded onto the surface of the first rotating roll 11 via a heated slot die 9. The slot die is supplied by a hot melt supply system (with a heated hopper and variable speed gear pump, not shown) through a heated hose. The surface speed of the first of the glue metering rolls 11 is considerably slower than the nominal tangential line speed of the web of sheet material 50 to be embossed and adhesive-coated. The metering nips are shown in Figure 1 as stations 1, 2, and 3. The remaining glue metering rolls 12-14 rotate progressively faster so that the glue application nip, station 4, is surface speed matched. The glue 40 is transferred from the glue application roll 14 to the female embossing roll 15 at station 4. The glue 40 travels with the female embossing roll surface to station 5, where it is combined with the polymer web 50 which is carried into station 5 via male embossing roll 16.

At station 5, the polymer web 50 is embossed and combined with the glue 40 simultaneously to form an adhesive coated web 60. The web 60, glued to the surface of roll 15, travels with the roll surface to station 6, where a rubber coated pressure roll 17 applies pressure to the glued portion of the web. The web 60, still glued to the female embossing roll 15, travels to